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Where's the Poop? Environmental Challenges for Large and Small Animal Feeding Operations

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Where's the Poop?

Environmental Challenges for Large and Small Animal Feeding Operations

Rick Koelsch, University of Nebraska and
John Lawrence, Iowa State University

Where's the Poop?

- **Small AFO**
 - Under 1000 AU
 - Below the NPDES permit size unless designated or direct contact or man-made discharge to water of US
 - May require state permit
- **CAFO**
 - 1000 or more AU
 - Required to have NPDES permit

Where's the Poop?

AFO or CAFO

- **Which size has the more operations?**
- **Which size has more animals/poop?**
- **Which size has more recoverable nutrients?**
- **Which size has more acres available for manure?**

Where's the Poop?

AFO or CAFO

- Who are your clients?
- What are their challenges?
- How do you reach them?
- Where is the greatest environmental risk?
- Where can you have the greatest impact?

Status and Trends in Small and Mid-Sized Animal Operations in the U.S.

Noel Gollehon

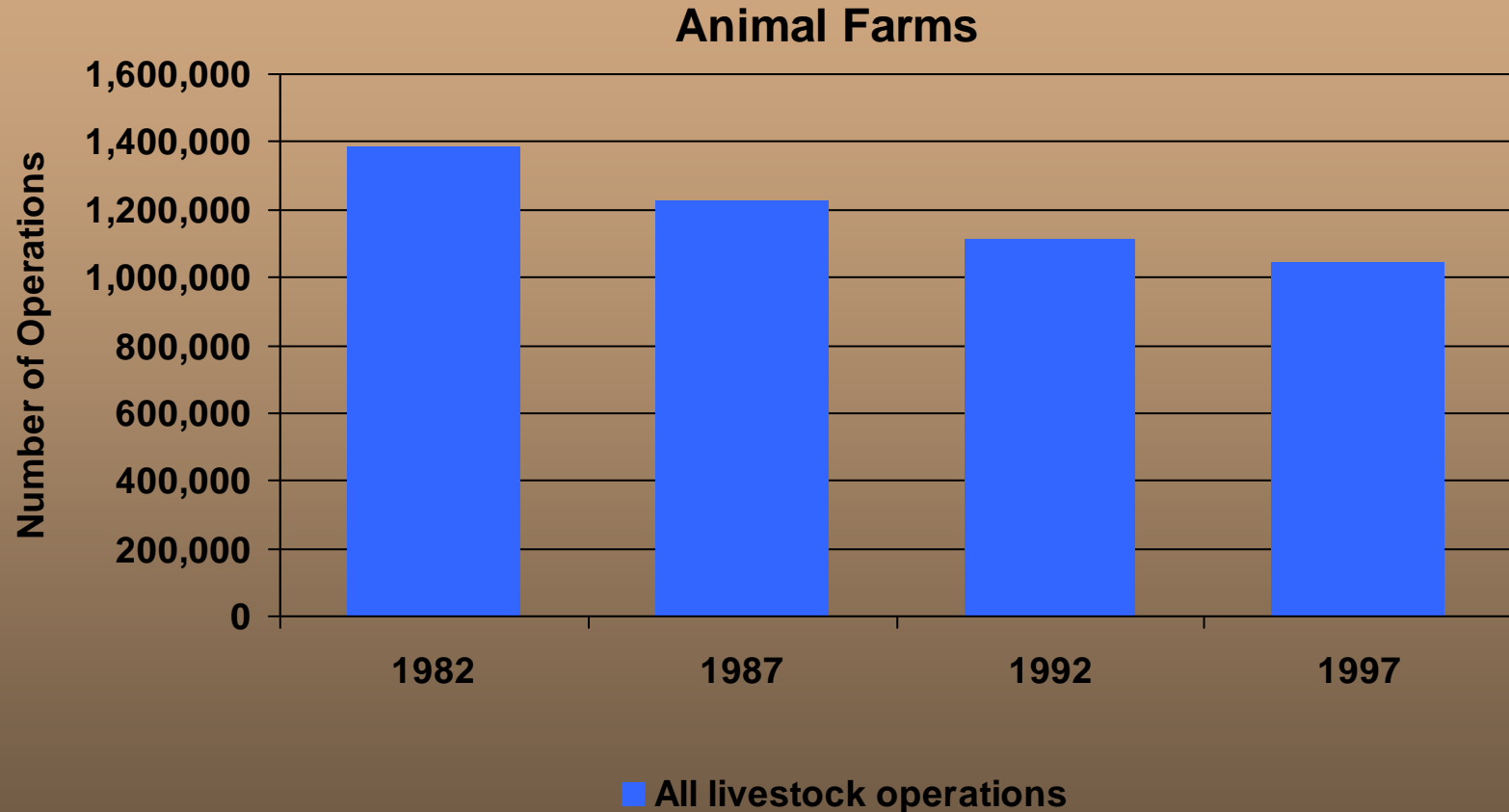
Economic Research Service, USDA

**Presentation at the Workshop on Small and Mid-Sized
Animal Operations and Water Quality**

May 2, 2005

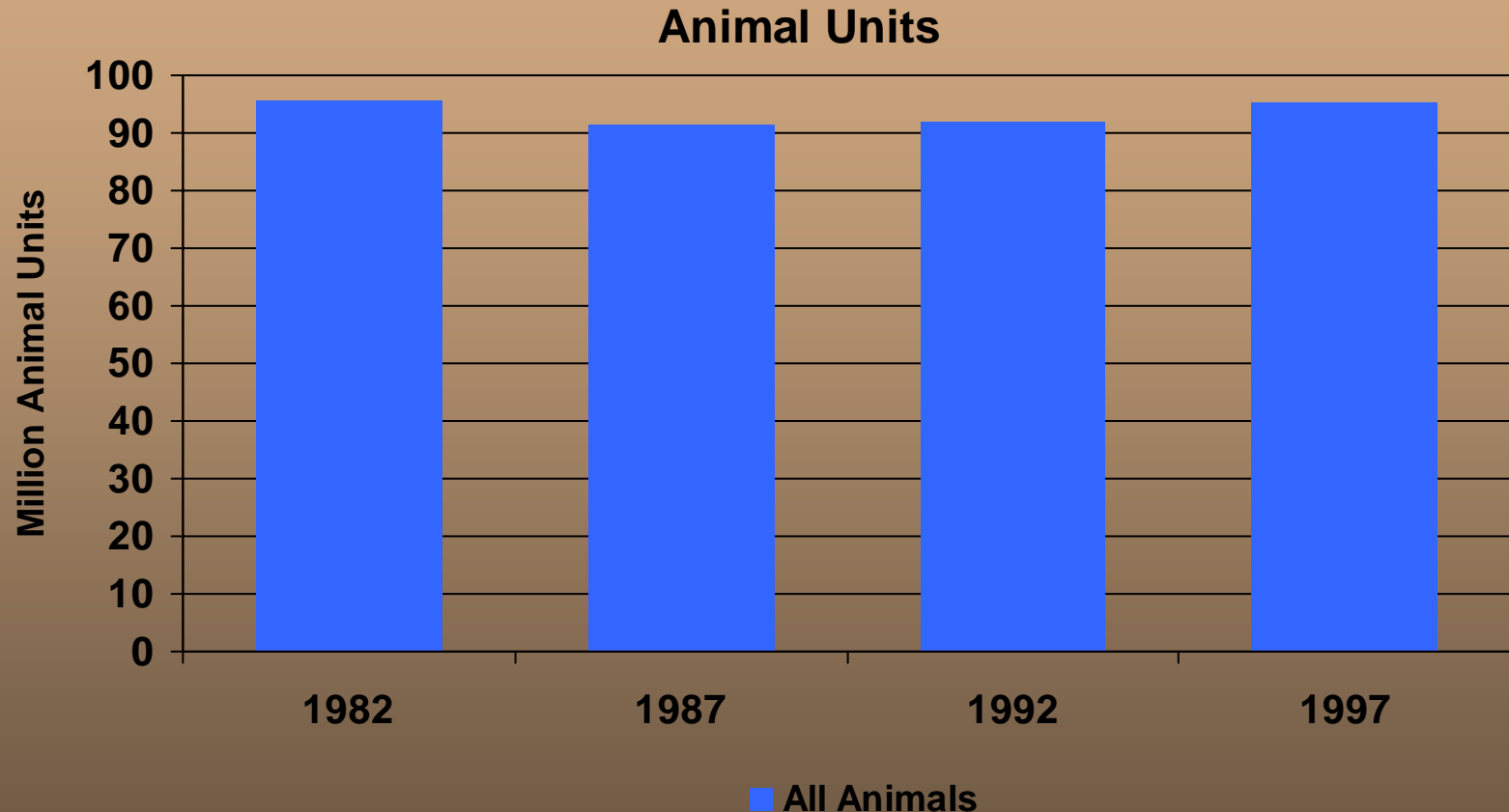
Linthicum Heights, Maryland

Numbers of farms, animals, & nutrients



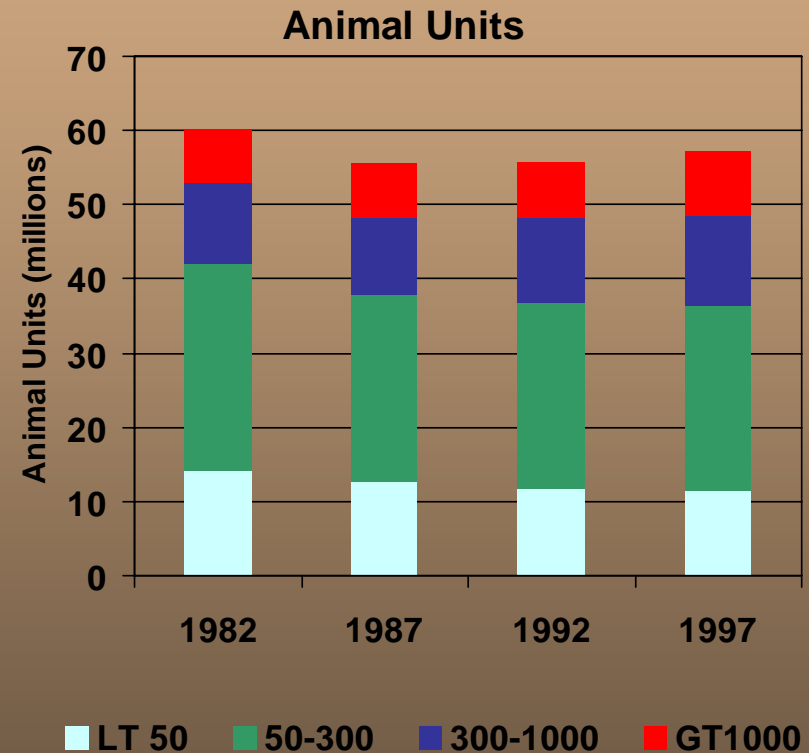
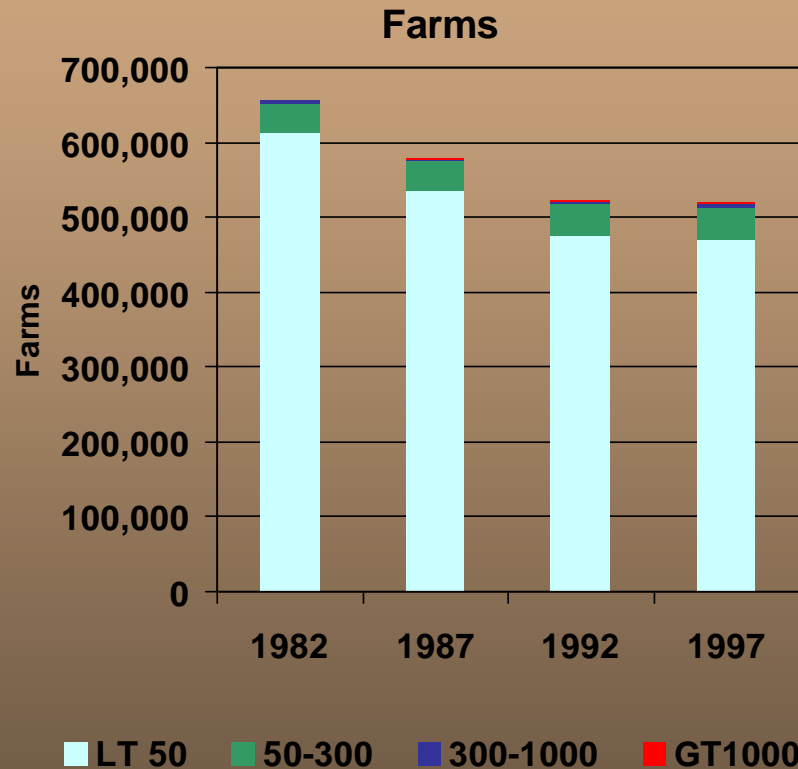
Source: Kellogg, *et al.*, 2000

Numbers of farms, animals, & nutrients



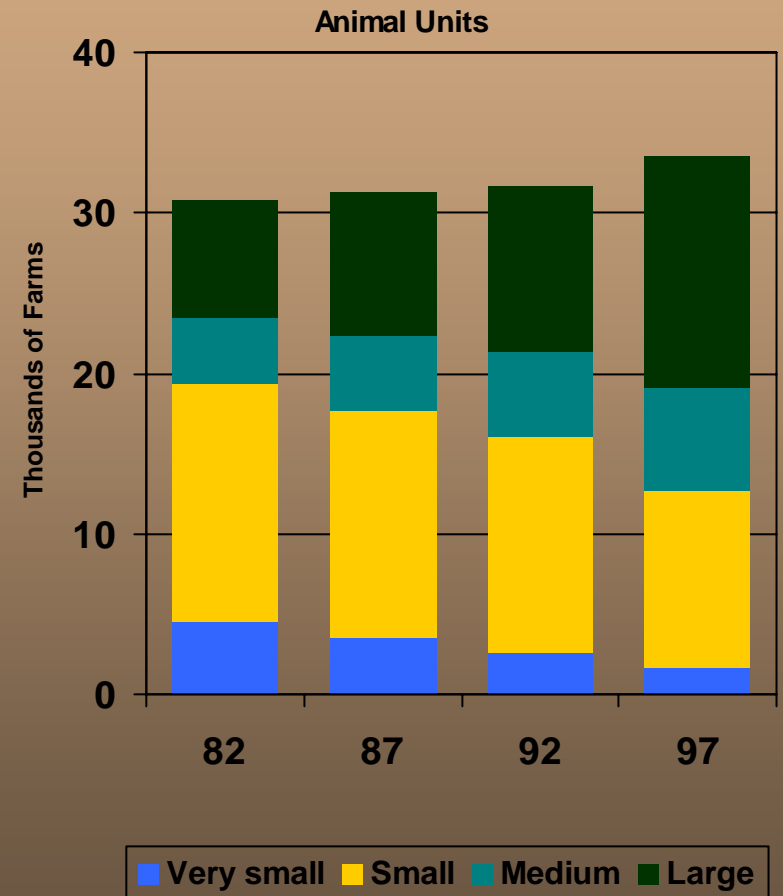
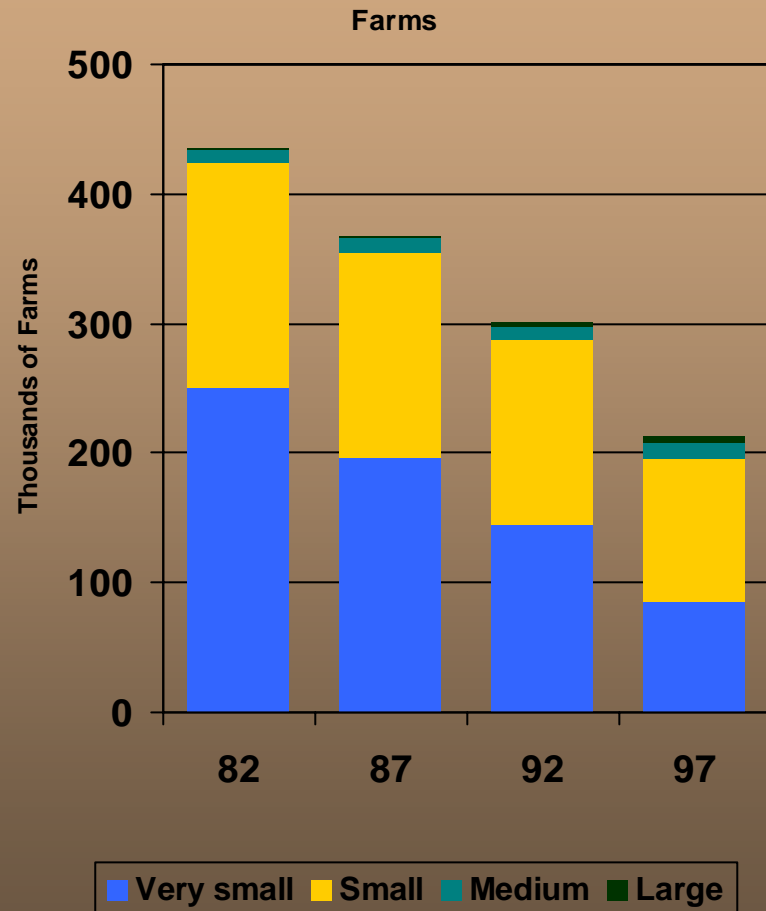
Source: Kellogg, *et al.*, 2000

Non-confined animals: Farms and AU



Source: Kellogg, *et al.*, 2000

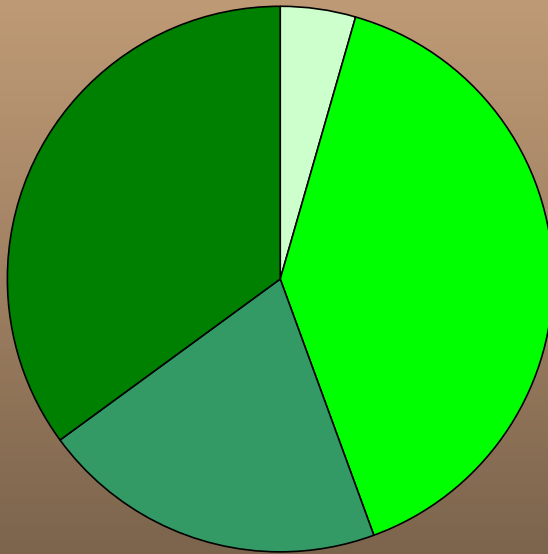
Confined animals: Farms and AU



Source: Gollehon, *et al.*, 2001

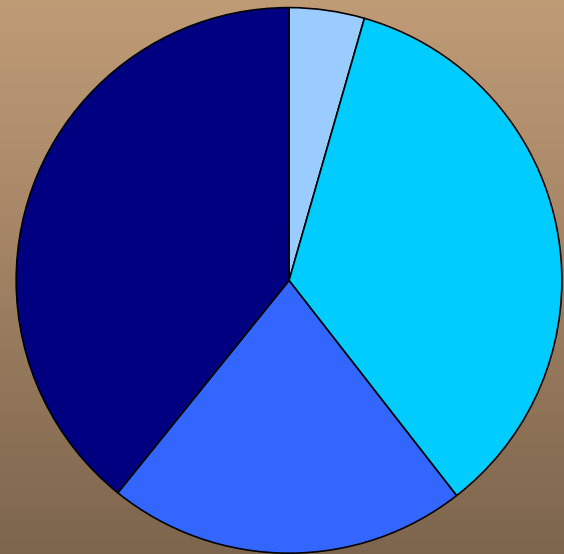
Confined animals: Manure nutrients

Recoverable Nitrogen



LT 50 50-300 300-1000 GT1000

Recoverable Phosphorus

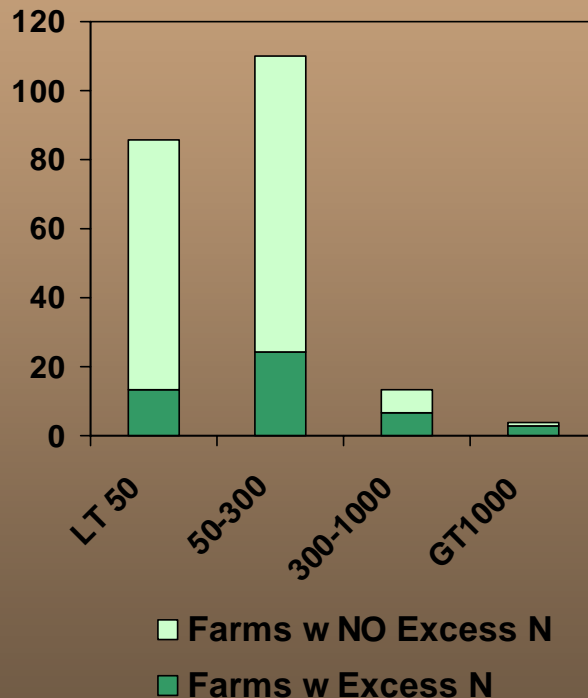


LT 50 50-300 300-1000 GT1000

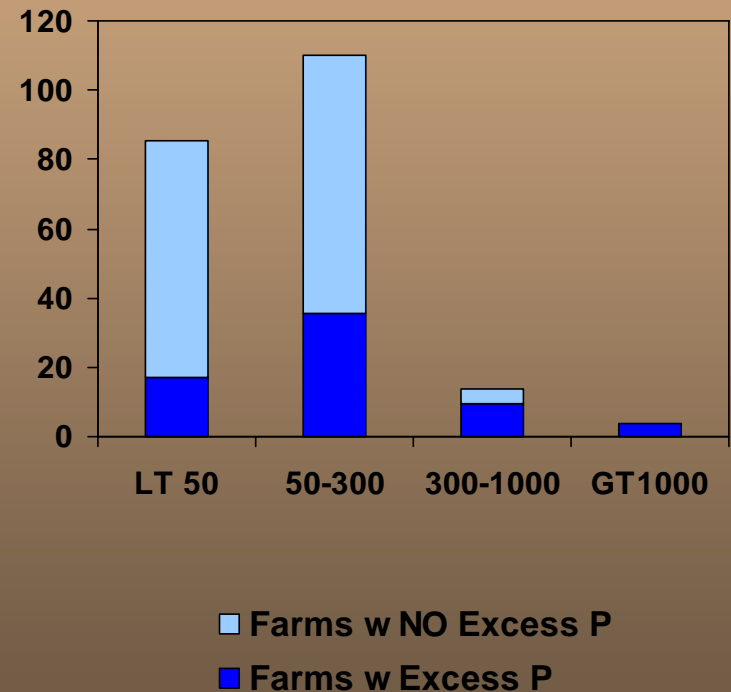
Source: Gollehon, *et al.*, 2001

Confined animals: Farms with excess manure

Farms with Excess Nitrogen



Farms with Excess Phosphorus



Source: Gollehon, *et al.*, 2001

AFO Challenges

- **More than half of recoverable nutrients**
- **98% of animal operations**
 - **Over 700,000 farms**
 - **150,000 farms 300-1000 AU**
- **Largely under the radar**
- **Balancing carrots and sticks**
 - **Few sticks if unregulated**
 - **Cost-share carrots are costly to implement and discourage of some producers**

AFO Take-home Points

- **Nutrient planning essential**
 - AFO's with enough land need better utilization
 - AFO's with excess nutrients need to plan beyond the farm borders
- **Educational programs important**
 - Too many to regulate
 - Technical assistance programs costly

Bang-for-the-Buck Programming

- **Results in water quality improvement**
- **Not so detail as to discourage adoption**
- **The producer understands:**
 - **Greatest water quality risk factors**
 - **Nutrient value of manure**
 - **BMPs and simple strategies to address both**

***Are you going to lead
or defend?***